

I claim:

1. A weapon for discharging high velocity, non-lethal projectiles utilizing pressurized gas, said weapon comprising:

    a housing including a handle and a projectile storage cylinder sized and shaped to receive a plurality of substantially spherical-shaped projectiles;

    a discharge barrel having an open muzzle end and a closed base end proximate said projectile storage cylinder;

    a projectile loading chamber disposed at said barrel base end and communicating with said projectile storage cylinder;

    an enclosure for receiving a removable pressurized gas storage source;

    a gas discharge cell communicating with a gas storage source in said enclosure and adapted to receive a charge of compressed gas for selective projectile discharge;

    a hammer and striker assembly for selectively releasing a charge of compressed gas from said gas discharge cell into said loading chamber to discharge a projectile through said barrel;

    a trigger assembly for selectively operating said hammer and striker assembly; and

    a valve assembly associated with said gas discharge cell adapted to permit selective variance of the compressed gas charge pressure released by said hammer assembly to correspondingly vary the velocity and impact of the discharged projectile.

2. The weapon as claimed in claim 1, wherein the pressure of said gas charge released by said gas discharge cell may be selectively varied between 400-800 psig. per charge.
3. The weapon as claimed in claim 2, wherein said removable gas storage source comprises a replaceable gas cartridge disposed in said enclosure and containing compressed gas of an amount sufficient for up to 20 charges.
4. The weapon as claimed in claim 1, wherein said trigger assembly further comprises a cocking bolt adapted for reciprocal movement within said housing to control loading of a projectile from said projectile storage cylinder to said loading chamber while simultaneously controlling the return of said hammer and striker assembly to an armed position.
5. The weapon as claimed in claim 1, wherein said projectiles comprise spheres, and wherein said projectile storage chamber further includes a spring bias mechanism for urging movement of said spheres into said loading chamber.
6. The weapon as claimed in claim 5, wherein said spheres are approximately 0.5"-0.8" in diameter and 5-10 grams in weight.
7. The weapon as claimed in claim 6, wherein said spheres are constructed from material selected from the group consisting of aluminum, stainless steel, nylon, and other dense solid materials.

8. The weapon as claimed in claim 7, wherein said spheres are selected from the group consisting of solid aluminum and hollow stainless steel balls.

9. The weapon as claimed in claim 1, wherein said weapon further includes a gas pressure gauge for indicating the pressure of the gas remaining in the storage source disposed in said enclosure.

10. The weapon as claimed in claim 1, wherein said weapon comprises a semi-automatic pistol.

11. The weapon as claimed in claim 1, wherein said weapon comprises a revolver.

12. The weapon as claimed in claim 1, wherein said hammer and striker assembly comprises a striker flange adapted for reciprocal movement between first and second striker positions, a hammer element adapted for reciprocal movement between first and second hammer element positions, a first spring bias member for urging said hammer element in a first direction from said first hammer element position to said second hammer element position to impact said striker flange and move it to said second striker position, a gas discharge valve adapted for releasing a charge of gas from said gas discharge cell to said loading chamber upon movement of said striker flange to said second striker position resulting from impact by said hammer element, a cocking bolt responsive to the release of gas from said gas discharge cell and adapted to return said hammer element to its first hammer element position, said trigger assembly selectively retaining said hammer element in its first hammer

element position until release, and a second spring bias member for returning said striker flange to its first striker position and closing said gas discharge valve.

13. The weapon as claimed in claim 12, wherein said valve assembly comprises a conduit member interconnecting said gas discharge cell and said loading chamber, said gas discharge valve disposed in said conduit, and a valve seat for opening and closing said valve.
14. The weapon as claimed in claim 13, wherein said valve assembly further comprises a projectile velocity adjustment knob for selectively varying the amount of gas discharged by said gas discharge cell into said loading chamber in any one single charge by selectively varying the volume of gas passing through said valve when in an open position.
15. The weapon as claimed in claim 1, wherein said valve assembly comprises a gas release element associated with said loading chamber for selectively off gassing a portion of the gas from said chamber upon release of a charge of compressed gas from said pressurized gas discharge cell into said loading chamber to vary the velocity of a projectile discharged through said barrel.
16. The weapon as claimed in claim 1, wherein said valve assembly comprises a projectile velocity adjustment knob for selectively varying the volume of gas discharged by said gas discharge cell into said loading chamber in any one single charge.

17. In a weapon for discharging high velocity projectiles utilizing pressurized gas, said weapon including a housing having a handle and a projectile storage cylinder sized and shaped to receive a plurality of projectiles, a discharge barrel having an open muzzle end and a closed base end proximate the projectile storage cylinder, a projectile loading chamber disposed at the barrel base end and communicating with the projectile storage cylinder, an enclosure for receiving a removable pressurized gas storage cartridge, a hammer assembly for selectively releasing a charge of compressed gas from the pressurized gas storage cartridge into the loading chamber to discharge a projectile through the barrel, and a trigger assembly for selectively operating the hammer assembly, the improvement wherein said weapon is adapted for discharging high velocity, non-lethal projectiles and further comprises a gas discharge cell communicating with said gas storage cartridge and adapted to receive a charge of compressed gas therefrom for selective release into said projectile loading chamber for projectile discharge, and a valve assembly associated with said gas discharge cell adapted to control the release of gas into said loading chamber for projectile discharge and to permit selective variance of the amount of compressed gas pressure released from said gas discharge cell in each charge to correspondingly vary the velocity and impact of the discharged non-lethal projectiles.

18. The weapon improvement of claim 17, wherein said projectile storage cylinder comprises a spring loaded magazine having a spring bias member for urging the non-lethal projectiles into said projectile loading chamber.

19. The weapon improvement of claim 17, wherein said improvement further comprises a gas pressure gauge disposed on said housing for indicating the pressure of the gas remaining in the removable pressurized storage cartridge disposed in said enclosure.

20. The weapon improvement of claim 17, wherein said hammer assembly comprises a striker flange adapted for reciprocal movement between first and second striker positions, a hammer element adapted for reciprocal movement between first and second hammer element positions, a first spring bias member for urging said hammer element in a first direction from said first hammer element position to said second hammer element position to impact said striker flange and move it to said second striker position, a gas discharge valve adapted for releasing a charge of gas from said gas discharge cell to said loading chamber upon movement of said striker flange to said second striker position resulting from impact by said hammer element, a cocking bolt responsive to the release of gas from said gas discharge cell and adapted to return said hammer element to its first hammer element position, said trigger assembly selectively retaining said hammer element in its first hammer element position until release, and a second spring bias member for returning said striker flange to its first striker position and closing said gas discharge valve.

21. The weapon improvement of claim 20, wherein said valve assembly comprises a conduit member interconnecting said gas discharge cell and said loading chamber, said gas discharge valve disposed in said conduit, and a valve seat for opening and closing said valve.

22. The weapon as claimed in claim 21, wherein said valve assembly further comprises a projectile velocity adjustment knob for selectively varying the amount of gas discharged by said gas discharge cell into said loading chamber in any one single charge by selectively varying the volume of gas passing through said valve into said conduit when in an open position.

23. The weapon as claimed in claim 21, wherein said valve assembly further comprises a projectile velocity adjustment knob for selectively varying the amount of gas discharged into said gas discharge cell from said gas storage cartridge to vary the volume of gas in any one single charge for release into said loading chamber.

24. A semi-automatic pistol for discharging high velocity, non-lethal projectiles utilizing pressurized gas, said pistol comprising:  
a housing including a handle, a discharge barrel having an open muzzle end and a closed base end, a projectile storage cylinder sized and shaped to receive a plurality of aligned and substantially spherical-shaped projectiles and positioned adjacent and substantially parallel to said discharge barrel, and a sleeve for containing pistol operating elements;  
a projectile loading chamber disposed at said barrel base end and communicating with said projectile storage cylinder;  
an enclosure for receiving a removable pressurized gas storage cartridge;

a gas discharge cell disposed in said sleeve for communicating with the gas storage cartridge in said enclosure and adapted to receive a charge of compressed gas for selective projectile discharge;

a hammer and striker assembly disposed in said sleeve for selectively releasing a charge of compressed gas from said gas discharge cell into said loading chamber to discharge a projectile through said barrel;

a trigger assembly for selectively operating said hammer and striker assembly; and

a valve assembly disposed in said sleeve and associated with said gas discharge cell to control the release of gas into said loading chamber for projectile discharge and to permit selective variance of the amount of compressed gas pressure released from said gas discharge cell in each charge to correspondingly vary the velocity and impact of the discharged non-lethal projectiles.

25. The semi-automatic pistol as claimed in claim 24, wherein said sleeve is positioned coaxially with said barrel.

26. The semi-automatic pistol as claimed in claim 24, wherein said sleeve is spaced adjacent and substantially parallel to said barrel.

27. The semi-automatic pistol as claimed in claim 24, wherein said hammer and striker assembly comprises a striker flange disposed within said sleeve proximate said projectile loading chamber and adapted for reciprocal movement therewithin between first and second striker positions to control the release of a compressed gas charge from said gas discharge cell into said

loading chamber to discharge a projectile through said barrel, a hammer element disposed within said sleeve for reciprocal movement therewithin between first and second hammer element positions to control the operation of said striker flange, a first spring bias member disposed in said sleeve for urging said hammer element in a first direction from said first hammer element position to said second hammer element position to impact said striker flange and move said striker flange to said second striker position, a gas discharge valve disposed in said sleeve adapted for releasing a charge of gas from said gas discharge cell to said loading chamber upon movement of said striker flange to said second striker position resulting from impact by said hammer element, a cocking bolt responsive to the release of gas from said gas discharge cell and adapted to return said hammer element to its first hammer element position in opposition to said first spring bias member, said trigger assembly selectively retaining said hammer element in its first hammer element position until release, and a second spring bias member disposed in said sleeve for returning said striker flange to its first striker position and closing said gas discharge valve.

28. The semi-automatic pistol as claimed in claim 27, wherein said cocking bolt is disposed in said sleeve.
29. The semi-automatic pistol as claimed in claim 27, wherein said valve assembly comprises a conduit member interconnecting said gas discharge cell and said loading chamber, said gas discharge valve disposed in said conduit, and a valve seat for opening and closing said valve.

30. The semi-automatic pistol as claimed in claim 29, wherein said valve assembly further comprises a projectile velocity adjustment knob for selectively varying the amount of gas discharged by said gas discharge cell into said loading chamber in any one single charge by selectively varying the volume of gas passing through said valve into said conduit when in an open position.

31. The semi-automatic pistol as claimed in claim 24, wherein said pistol further includes a gas pressure gauge for indicating the pressure of the gas remaining in the gas storage cartridge disposed in said enclosure.

32. A revolver for discharging high velocity, non-lethal projectiles utilizing pressurized gas, said revolver comprising:

    a housing including a handle, a discharge barrel having an open muzzle end and a closed base end, and a revolving cylinder having a plurality of chambers each sized and shaped for each to receive a substantially spherical-shaped projectile, said chambers being positioned to successively align each said chamber with said discharge barrel;

    an enclosure for receiving a removable pressurized gas storage cartridge;

    a gas discharge cell communicating with the gas storage cartridge in said enclosure and adapted to receive a charge of compressed gas for selective projectile discharge;

    a hammer and striker assembly for selectively releasing a charge of compressed gas from said gas discharge cell into one chamber of said revolving cylinder to discharge a projectile through said barrel;

a trigger assembly for selectively operating said hammer and striker assembly; and

a valve assembly associated with said gas discharge cell adapted to control the release of a gas charge into a chamber of said revolving cylinder for projectile discharge and to permit selective variance of the amount of compressed gas pressure released from said gas discharge cell in each charge to correspondingly vary the velocity and impact of the discharged non-lethal projectiles.

33. The revolver as claimed in claim 32, wherein said hammer assembly comprises a striker flange adapted for reciprocal movement between a fixed first striker position and a variable second striker position, a hammer element adapted for reciprocal movement between a variable first hammer element position and a fixed second hammer element position, a first spring bias member for urging said hammer element in a first direction from said first hammer element position to said second hammer element position to impact said striker flange and move it to said second striker position, a gas discharge valve adapted for releasing a charge of gas from said gas discharge cell to said loading chamber upon movement of said striker flange to said second striker position resulting from impact by said hammer element, said trigger assembly selectively retaining said hammer element in its first hammer element position until release, and a second spring bias member for returning said striker flange to its first striker position and closing said gas discharge valve.

34. The revolver as claimed in claim 33, wherein said valve assembly comprises a conduit member interconnecting said gas discharge cell and said

loading chamber, a striker tube disposed within said discharge cell and having an open end communicating with said conduit and a closed end forming said striker flange, said gas discharge valve being in the form of a valve port disposed in said striker tube to control the access between the interior of said gas discharge cell and the open end of said striker tube, a valve seat for opening and closing said valve port, and a spring member for urging said valve seat to a closed position and said striker flange to said first striker position, movement by said striker tube to said second striker position urging said valve seat and valve port to an open position in opposition to said spring member to discharge gas from said discharge cell to said loading chamber.

35. The revolver as claimed in claim 34, wherein said revolver further comprises a projectile velocity adjustment member for selectively varying the amount of gas discharged by said gas discharge cell into said loading chamber in any one single charge, said adjustment member selectively varying the position of said hammer element in its first position to vary the force of impact by said hammer element on said striker flange which in turn varies the second striker position and thereby varies the amount of time said valve port is in its open position.
36. The revolver as claimed in claim 32, wherein said revolver further comprises a projectile velocity adjustment member for selectively varying the amount of gas discharged into said gas discharge cell from said gas storage cartridge to vary the volume of gas in any one single charge for release into said loading chamber.